

# A SURVEY OF TRAVELLERS CARRYING HOST FRUIT OF QUEENSLAND FRUIT FLY, *BACTROCERA TRYONI* (FROGGATT), INTO A FRUIT FLY FREE AREA IN 1997-98 FOLLOWING THE INTRODUCTION OF PENALTY NOTICES

B. C. Dominiak<sup>1</sup>, T. D. Rafferty<sup>2</sup> and I. M. Barchia<sup>3</sup>

<sup>1</sup>NSW Agriculture, 161 Kite St, Orange, New South Wales 2800, Australia

<sup>2</sup>NSW Agriculture, PMB Yanco, New South Wales 2703, Australia

<sup>3</sup>NSW Agriculture, PMB 8 Camden, New South Wales 2570, Australia

Email: bernie.dominiak@agric.nsw.gov.au

## Summary

Eighty nine random roadblocks were conducted on the northern and eastern side of the Fruit Fly Exclusion Zone during 44 days in 1997-98 to assess the risk posed by road travellers driving into and through the Murrumbidgee Irrigation Area. Drivers of all vehicles stopped at roadblocks were surveyed and vehicles were inspected for fruit. The 9,898 completed forms were analysed for trends according to types of travellers, origin and destination of travellers, roadblock sites, months of the year and fruit carried. Generally, 14% of travellers carried fruit into the inspection points although there were significant differences within each risk group. Travellers with New South Wales number plates carried significantly less fruit than cars from other States. Retirees (23%) and families (16%) were the higher risk types of travellers. Cars towing a caravan were more likely to carry fruit (43%) compared with cars without caravans (13%). The ratio of those responsibly disposing of fruit to those carrying fruit was 27% of most risk groups. Local travellers made up 58% of the traffic entering the Zone.

Travellers caught carrying fruit were penalised using the Self Enforcement Infringement Notice System of on-the-spot fines. Despite over 300 notices being issued, there was no change in the proportion of travellers carrying fruit by the end of the season.

**Key words:** fruit fly incursion management, risk analysis, area freedom, roadblocks

## INTRODUCTION

Queensland fruit fly (Qfly), *Bactrocera tryoni* (Froggatt), remains a serious pest of horticultural crops in eastern Australia and affects domestic and export trade. In 1994, the Fruit Fly Exclusion Zone (FFEZ) was established on the ecological edge of the Qfly range (Anon. 1993) to access export markets under a fruit fly area freedom status. Citrus exports increased 4-fold over 7 years ending 1995/96 (Sutherst *et al.* 2000). Since 1994, authorised roadside vehicle inspections (roadblocks) on major highways entering the FFEZ have been used to minimise the entry of fruit into the Zone. Travellers, carrying infested fruit, were blamed for the introduction of Qfly into New Caledonia and French Polynesia (Drew and Romig 1997), rather than commercial traders. Amice and Sales (1997) concluded that residents, who illegally brought backyard fruit from Australia, were most probably responsible for the introduction of Qfly in New Caledonia.

The New South Wales portion of the FFEZ has been a quarantine zone for fruit fly for at least 20 years. There has been an evolution from farm based programs to district wide campaigns, and further into regional programs. Following the many fruit fly outbreaks in

1989, an education officer was appointed in 1990 to coordinate a community awareness campaign covering large portions of Victoria and New South Wales.

Additionally, Sudler & Hennessey (1993) designed a coordinated series of eight road signs advising travellers that there was a fruit fly free zone ahead and not to carry fruit into the zone. These signs were installed over 50 km leading up to the fruit disposal bin. NSW Agriculture (1997) reported that 97% of travellers had seen the road signs.

In a second review of the community awareness program, Sudler and Hennessey (1996) recommended the installation of additional road signs on the exit side of the FFEZ. Subsequently exit signs stating, "*Fruit Fly Exclusion Zone ends now*" and "*Don't bring fruit back on return trip*" were erected in 1996/97. Additionally, "information" signs, thanking travellers for stopping and disposing of fruit, along with a map of the FFEZ and some information about fruit hosts, were erected at disposal bins. All New South Wales sites had "exit" and "information" signs added to the existing 8 entry signs during 1997/98.

News bulletins, editorials and information messages were sent to a wide variety of newspapers, magazines (including 24 ethnic publications), television and radio

stations (Marrows and Dominiak 1998). A television community service announcement, including a warning about the \$200 spot fines, was sent to 13 stations in New South Wales, 4 stations in Victoria, 7 in Queensland, and to 4 other stations. A new radio community service announcement was sent to 25 New South Wales radio stations.

Vehicle inspections at random sites on major highways intercept some fruit but the roadblock presence itself also has a community awareness function. This function is likely to be more effective on local residents who regularly see the operation and are reminded about their obligation not to bring fruit into the Zone. Campbell (2000) reported that travellers passing through a roadblock site more than once quickly decreased the amount of fruit being carried into the roadblock site on subsequent trips.

The original program of permanent roadblock sites near the FFEZ ceased in 1983. No roadblock program operated at all again until the current random program was started in 1994-95 (NSW Agriculture, 1997). The program is fine-tuned as risks are reassessed each year (Dominiak *et al.* 1998, Dominiak *et al.* 2000a). Despite the many years of community awareness programs, the erection of road signs, and several years of roadblock operations and fruit seizures, Dominiak *et al.* (2000a) noted that the rate of fruit carriage was still deemed to be unacceptably high. In 1997, spot fines (known as SEINS or the Self Enforcement Infringement Notice System) were introduced to decrease the number of travellers carrying fruit into the FFEZ.

Dominiak *et al.* (2000b) and Campbell (2000) noted the importance of evaluating results at individual roadblock sites. This paper reports on the fourth year of operations covering 89 roadblock operations or events on 44 days during June 1997 to March 1998.

### METHODS

Based on results of NSW Agriculture (1997), Dominiak *et al.* (1998), and Dominiak *et al.* (2000a), random roadblocks were established on the Newell Highway (north of Narrandera), Sturt Highway (at Sandigo east of Narrandera), Mid Western Highway (near Rankin Springs) and at Kamarah, all on the entry side of the FFEZ near Griffith (Figure 1), in the Murrumbidgee Irrigation Area (MIA). School and public holiday periods were previously identified as high-risk periods and more than half of the roadblocks were conducted during these times. Roadblocks were conducted on 44 dates; 1 day in

June, July and September 1997, 2 days in October and December 1997, 12 days in January and February 1998, and 13 days in March 1998. However, on any 1 day, roadblocks operated on up to 3 sites. In total there were 89 roadblock events over the 44 days (Table 1).

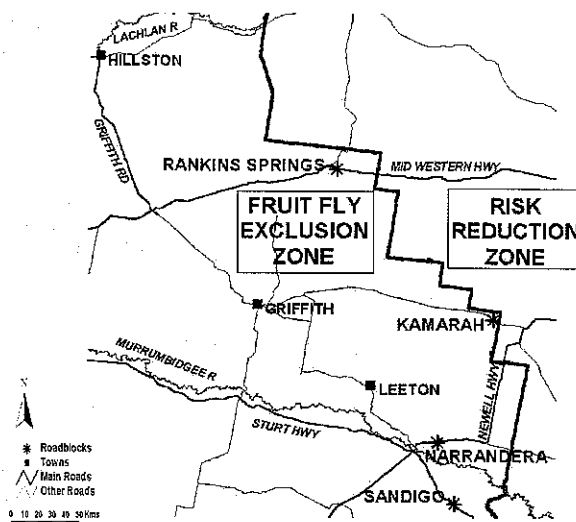


Figure 1. Map of the roadblock sites (Newell Highway north of Narrandera, Sturt Highway at Sandigo, Mid Western Highway near Rankin Springs, and Kamarah) and main towns in the horticultural production areas.

The driver of each vehicle stopped was asked a standard set of survey questions. The surveys recorded the presence or absence of fruit, fruit dumping, vehicle type, occupant type, vehicle registration number (State origin) and destination. While 9,898 survey forms were completed, a proportion of forms did not have data in all lines and this lack of information is reflected in the respective tables.

If fruit was found during a vehicle inspection, additional information was collected. Where the amount of fruit carried breached predetermined levels, a penalty notice (SEINS) or a \$200 spot fine, was mailed to the home address of the traveller. Any fruit found in vehicles was confiscated and destroyed but was not examined for the presence of fruit fly eggs or larvae.

### Statistical Analysis

The aim of this analysis was to relate the presence of fruit and fruit dumping to the risk factors: vehicle type, vehicle occupant, State of origin and destination. A generalized linear model (McCullagh and Nelder 1989) was used to examine the relationships where binomial errors were assumed

**Table 1: Number of roadblock operational days conducted at different sites during 1997-1998.**

Month	Roadblock sites			
	Newell	Kamarah	Mid Western	Sturt
June 97	-	-	-	1
July 97	-	-	-	1
August 97	-	-	-	-
September 97	-	-	-	1
October 97	2	-	-	1
November 97	-	-	-	-
December 97	2	-	-	-
January 98	11	2	1	10
February 98	12	4	3	6
March 98	13	3	5	11
Average number of vehicles per site per day	140	86	64	95

and a logit link function was used. The levels within each risk factor were compared by testing the logit link coefficients from the mathematical models of individual risk factors because of many missing values in the destination term and many missing values in the other risk factors (Table 2). Factors of months of the year and roadblock sites were confounded due to small numbers of observations and these were analysed separately.

Likelihood Ratio (LR) chi-square statistic was used to test the significant effects of the risk factors and standard errors were used to compare differences within each risk factor (Table 3 and Table 4). The interaction between the factors of months and roadblock sites was tested on the data collected for the January 98 to March 98 period only, because we had complete observations from the 4 sites. However the details of all sites and the proportions of travellers carrying (Table 5) and disposing of fruit (Table 6) is provided. The analyses were run on SAS/STAT PROC GENMOD (SAS Institute Inc. 1997).

## RESULTS

Overall, the percentage of vehicles carrying fruit in this study was 13.9%. The survey form was slightly different to the previous year but comparisons were still possible for many categories of traveller. There were highly significant differences ( $P=0.001$ ) between types of vehicles, types of travellers (vehicle occupants), State origins of trip, destination, road and months of the year (Table 2).

All traveller groups most likely to carry fruit, were also most likely to dispose of fruit; those least likely to carry fruit were least likely to dispose of fruit.

Fruit was carried by 43.4% of travellers in car/caravan (4% of the traffic flow) while only 12.7% of travellers in cars (92% of traffic flow) carried fruit (Table 3). This is a similar trend to the previous year (Dominiak *et al.* 2000a). Retirees had the highest probability of carrying fruit (22.8%), followed by family travellers (16.1%) and adult (not retired) travellers (14.2%). Single travellers and commercial travellers were the least likely (6.3% and 3.5% respectively) to carry fruit (Table 3).

Based on their vehicle number plates, 8.3% of travellers from New South Wales (64% of traffic flow) carried fruit compared with over 20% for all other States (Table 3). Similarly, there were highly significant differences ( $P < 0.001$ ) between travellers based on destination (Table 2). Travellers going to the FFEZ (58% of traffic flow) were least likely to carry fruit compared to vehicles travelling to other destinations outside this Zone. The travel destination and origin category of the survey was only completed by 40% of travellers. Those going to or from New South Wales were less likely to carry or dispose of fruit than other origins or destinations.

The overall ratio of those disposing of at least some fruit was 27% of those carrying fruit (the disposal/carriage ratio). The main variation was for the cars with caravans group, the disposal/carriage ratio was 20% however this group represented less than 5% of the total sample traffic (Table 3). This lower rate of disposal, coupled with the highest rate of carriage (43%) suggests that this group is a higher risk group. Families, retired adults and single young adults all disposed of fruit equally as a ratio to the rate of fruit carriage. Travellers from Victoria and New South

Table 2. Chi-square values given by the Deviance.

Risk Factors	degrees of freedom	Presence of fruit	Fruit dumping
Vehicle type	2	94.61***	11.46*
Vehicle occupant	4	52.64***	16.29**
Origin (state)	3	151.26***	40.95***
Destination	5	63.65***	24.55*
Residuals	3048	3240.34 (NS)	1442.83 (NS)
Months	7	98***	168.0***
Sites	3	60***	34***
Months x Sites #	6	2.41 (NS)	16.19*

<sup>NS</sup> denotes Not Significant at 5% probability level

\*, \*\*, \*\*\* denote significance at 5%, 1% and 0.1% probability levels respectively

# Calculation was based on 3 month data only (January-February-March 1998)

Wales disposed of fruit equally (24%) while travellers from other States (excluding South Australia) were more likely (29%) to dispose of fruit. In general, no group was more or less likely to dispose of fruit compared with the proportion that carried fruit.

The proportion of fruit carriage varied significantly (Table 2) between months of the year ( $P < 0.001$ ) and between roadblock sites ( $P < 0.001$ ) but no interaction of months by sites was found ( $P > 0.05$ ). High-risk months were September to November with 26% of travellers carrying fruit. Fruit carriage was only 11.5% in January-February 1998 (Table 4). Of the two main highways assessed, travellers using the Newell Highway carried significantly more fruit than those on the Sturt Highway. Travellers through Kamarah carried the least fruit. High rates of fruit disposal followed high rates of fruit carriage (Table 4); low disposal rates followed low carriage rates. There was least likelihood of fruit carriage in the month of February while the months of July, September and October had high rates of fruit carriage. The proportion for fruit carriage in this survey for each road and month is given in Table 5 and Figure 2, and the rates of disposal are given in Table 6. The individual trends for the sites in 1997-98 are given in Figure 2. Annual trends for Newell and Mid-Western sites are shown in Figure 3 and for Kamarah and Sturt sites in Figure 4.

Dumping or disposal of fruit generally followed a similar pattern with fruit carriage but at a lower rate. An interaction between months and roadblock sites was present ( $P < 0.05$ ).

There were 309 penalty notices issued during the year with 6 in July, 11 in September, 2 in October, 16

in December, 97 in January, 72 in February, and 105 in March. Of the penalty notices issued in December, January, February and March, 199 were issued on the Newell Highway with 21 SEINS (10.5%) going to local (FFEZ and Risk Reduction Zone (RRZ) related home towns) residents; 73 notices issued from the Sturt Highway with 43 (58.9%) going to local residents, 4 issued from Kamarah with 3 (75%) going to local residents and 4 notices from the Mid-Western Highway with none going to local residents. Recipients are given 21 days to pay the fine or elect a court hearing. An appeal process, which takes 30 days, is also an option. There are several other appeal avenues that may further delay finalisation of the SEINS issue. The number of SEINS finalised for each month of the year were 4, 5, 5, 9, 12, 15, 24, 62, 150, 200, 237 and 259 respectively with 84% of notices finalised by the end of June. The Infringement Bureau advised, for all the programs they are involved in, that 75% of SEINS are finalised. They also indicated there is normally a delay of about one year between initial SEINS program start up and behavioural change in the target population.

Travellers from New South Wales were the largest traveller group. For the survey period, they made up 89%, 83%, 71%, and 52%, at the Kamarah, Sturt Highway, Mid-Western Highway and Newell Highway, sites respectively. Travellers from Victoria were the second largest travel-origin group. Travellers from Victoria made up 28%, 8%, 6% and 2% of the traffic flow respectively at the Newell highway, Sturt Highway, Mid-Western Highway, and Kamarah sites; 85% of all Victorian travellers in this survey were found on the Newell Highway. Travellers from South Australia made up 13%, 4%, 1% and <1% of the traffic flow on the Mid-Western

Table 3. Travellers (with Standard Error in brackets) of different traveller types carrying fruit.

Risk group	Sample size	Proportion carrying fruit	Proportion disposing of fruit	Proportion carrying fruit	
				1996/97 Dominiak <i>et al.</i> (2000a)	1994/95 NSW Agriculture (1997)
<b>Vehicle types</b>					
Sedans, wagons	8615	0.13 (0.00)b	0.04 (0.00)a		
Cars and caravans	373	0.43 (0.03)c	0.09 (0.01)b		
Commercial vehicles	397	0.07 (0.01)a	0.02 (0.01)a		
<b>Traveller types</b>					
Family	2843	0.16 (0.01)c	0.05 (0.00)c	0.16	0.29
Adult not retired	3351	0.14 (0.01)b	0.03 (0.00)b		
Retired adults	890	0.23 (0.01)d	0.07 (0.01)d	0.24	0.37
Single adult	2190	0.06 (0.01)a	0.02 (0.00)a		0.06
Commercial traveller	114	0.04 (0.11)a	0.01 (0.01)-	0.06	0.06
<b>Number plate state of origin</b>					
Victoria	1689	0.22 (0.01)b	0.05 (0.01)b		0.28
New South Wales	5746	0.08 (0.00)a	0.02 (0.00)a		0.16
South Australia	261	0.26 (0.03)b	0.05 (0.01)b		0.33
Other	1240	0.25 (0.01)b	0.07 (0.01)c		
<b>Destination of traveller</b>					
FPEZ	2306	0.17 (0.01)a	0.04 (0.00)a		
Risk Reduction Zone	17	0.24 (0.10)ab	0.00 (0.01)a		
Victoria	1320	0.41 (0.01)c	0.12 (0.01)b		
South Australia	237	0.31 (0.03)bc	0.11 (0.02)b		
Inland New South Wales	49	0.43 (0.07)c	0.06 (0.03)a		
other	30	0.47 (0.09)c	0.10 (0.06)ab		

Note: Types of risk groups followed by the same letter are not significantly different. Comparisons with two other reports are also given.

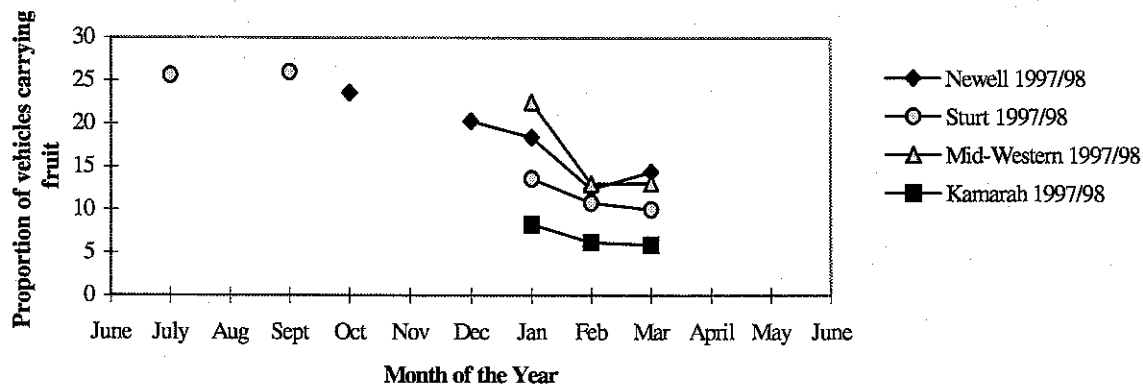


Figure 2. The proportion of fruit being carried by travellers at four sites for different months of the year.

Table 4. Travellers (with Standard Error in brackets) of different traveller types carrying fruit.

Risk group	Sample size	Proportion carrying fruit	Proportion disposing of fruit	Proportion carrying fruit	
				(1996/97) (Dominiak <i>et al.</i> 2000a)	(1994/95) (NSW Agriculture 1997)
<b>Highway or road site</b>					
Newell Highway (0.01)a	5589	0.16 (0.01)a	0.04 (0.00)a	0.15 (0.01)a	0.19
Kamarah	776	0.07 (0.01)c	0.01 (0.00)c	0.09 (0.01)b	
Mid Western Highway	577	0.14 (0.01)ab	0.04 (0.01)ab		
Sturt Highway (0.01)b	2958	0.13 (0.01)b	0.03 (0.00)b	0.14 (0.01)a	0.13
<b>Months of operation</b>					
June 1997	100	0.11 (0.03)	0.05 (0.02)		
July 1997	117	0.26 (0.04)	0.09 (0.03)		0.16 (0.03)
September 1997	100	0.26 (0.04)	0.11 (0.03)	0.21 (0.04)	0.22 (0.03)
October 1997	262	0.26 (0.03)	0.02 (0.01)		
November 1997					0.18 (0.02)
December 1997	271	0.20 (0.02)	0.21 (0.02)		0.17 (0.02)
January 1998	2639	0.16 (0.01)	0.05 (0.05)	0.14 (0.01)	0.17 (0.02)
February 1998	2814	0.12 (0.01)	0.02 (0.00)	0.10 (0.01)	0.10 (0.02)
March 1998	3595	0.12 (0.01)	0.02 (0.00)	0.12 (0.01)	0.14 (0.02)
April				0.14 (0.01)	
May					0.13 (0.02)

Table 5: Proportion of vehicles (with Standard Error in brackets) found to carry fruit by roadblock survey 1997-98.

Month	Roadblock sites			
	Newell	Kamarah	Mid Western	Sturt
June 97	-	-	-	0.11 (0.03)
July 97	-	-	-	0.26 (0.04)
August 97	-	-	-	-
September 97	-	-	-	0.26 (0.04)
October 97	0.24 (0.03)	-	-	0.63 (0.12)
November 97	-	-	-	-
December 97	0.20 (0.02)	-	-	-
January 98	0.18 (0.01)	0.08 (0.02)	0.23 (0.07)	0.14 (0.01)
February 98	0.12 (0.01)	0.06 (0.01)	0.13 (0.02)	0.11 (0.02)
March 98	0.14 (0.01)	0.06 (0.06)	0.13 (0.02)	0.10 (0.01)

**Table 6: Proportion of vehicles (with Standard Error in brackets) found to declare fruit dumping (disposal) from roadblock survey 1997-98.**

Month	Roadblock sites			
	Newell	Kamarah	Mid Western	Sturt
June 97	-	-	-	0.05 (0.02)
July 97	-	-	-	0.09 (0.03)
August 97	-	-	-	-
September 97	-	-	-	0.11 (0.03)
October 97	0.02 (0.01)	-	-	0.00 (0.00)
November 97	-	-	-	-
December 97	0.21 (0.03)	-	-	-
January 98	0.05 (0.01)	0.02 (0.01)	0.13 (0.05)	0.04 (0.01)
February 98	0.03 (0.00)	0.00 (0.00)	0.03 (0.01)	0.03 (0.01)
March 98	0.04 (0.01)	0.02 (0.01)	0.03 (0.01)	0.01 (0.00)

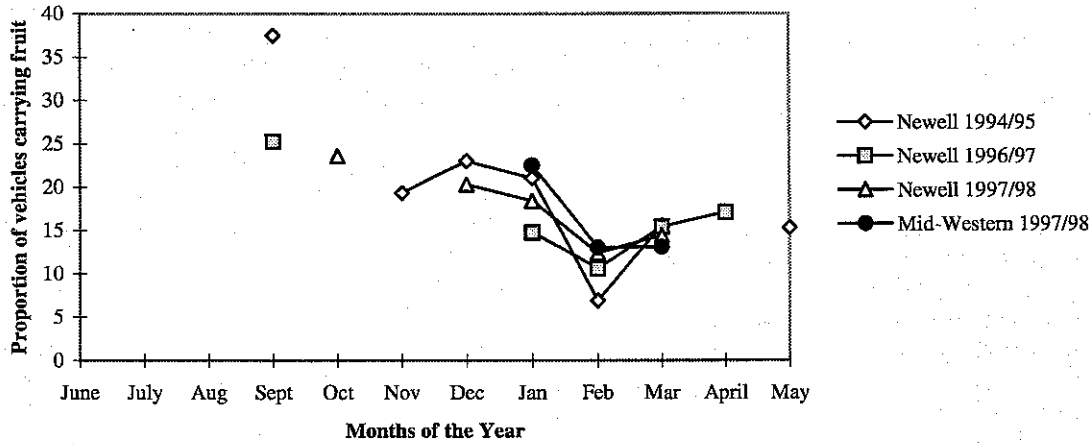


Figure 3. The proportion of travellers carrying fruit on the Newell and Mid-Western Highways in different years.

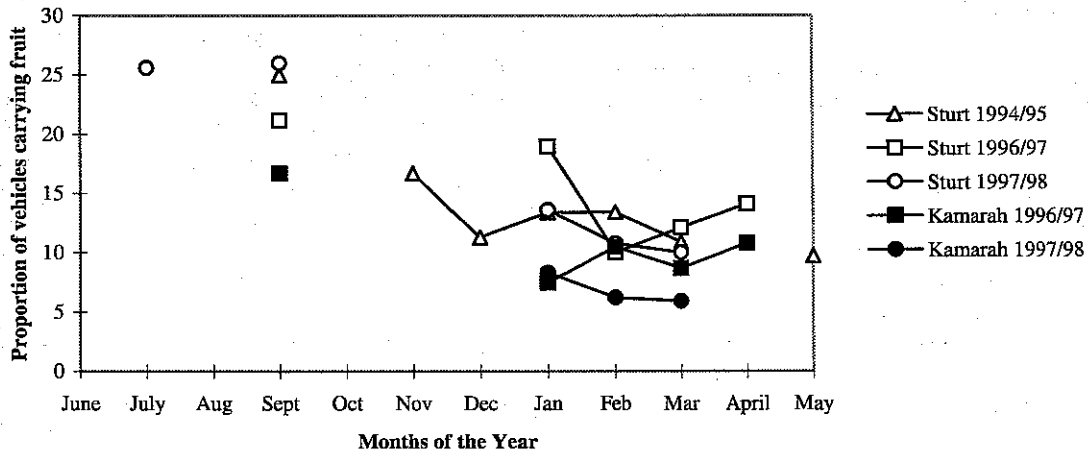


Figure 4. The proportion of travellers carrying fruit on the Sturt and Kamarah sites in different years.

Highway, Sturt Highway, Newell Highway, and Kamarah sites respectively.

### DISCUSSION

The habit of carrying fruit by the travelling public going into the MIA region did not change in the first year following the introduction of penalty notices. The fruit carrying habit of the traveller was 14 % in this survey, compared with 13% in 1996-97 (Dominiak *et al.* 2000a), 14% in Easter 1996 (Dominiak *et al.* 1998) and 16% in 1994-95 (NSW Agriculture 1997). Campbell (2000) also reported that 14% of vehicles carried fruit at 10 roadblock sites over 4 years. However it may be inappropriate to conclude that there has been no improvement as each year a greater proportion of high-risk travellers (as determined by the previous year's results) were targeted.

The proportion of local traffic passing through these sites remains high with 72% in 1994-95 (NSW Agriculture 1997), 56% in Easter 1996 (Dominiak *et al.* 1998), 71% in 1996/97 (Dominiak *et al.* 2000a) and 59% in this survey.

This has been the largest survey to date with 9,898 travellers surveyed, compared with 3,579 in 1996-97, 1,595 in Easter 1996 and 2,292 in 1994-95. Results generally confirm earlier findings. The issuing of SEINS, which was the main difference between this survey and previous operations, was a strategy to reduce the amount of fruit being carried by travellers into the FFEZ. Given the high proportion of local traffic, the combined effects of penalties and the public awareness of the roadblock campaign were expected to deter the local travellers from bringing fruit into the FFEZ.

The issuing of penalty notices and their influence on the fruit carrying behaviour of travellers may be viewed in several ways. All years started with a high rate of fruit carriage in July to October (Figure 3 and Figure 4) but had lower rates in the January to March period. In 1997-98, there was a downward trend at all sites except those on the Newell Highway (Figure 2). For the Newell Highway, there was less fruit carriage in February (Table 3 and Figure 3) in all years. Results for the Sturt Highway (Figure 4) showed a similar trend (Figure 2 and Figure 4). Results for the Kamarah site showed a decline in fruit carriage in 1997-98 (Figure 4). Dominiak *et al.* (2000b) reported that different roadblock sites had different characteristics. This appears to be the case with the 4 sites in this survey as well, even though they were

located quite near each other. The decreased fruit carriage in February has been reported previously (Dominiak *et al.* 2000b, Campbell 2000).

Despite the long history as a quarantine zone, the considerable community awareness campaigns in recent years, local residents still carry fruit at an unacceptable rate (8.25%). This puts at risk the export trade valued at about \$30 million. It was hoped that the SEINS program would result in a reduction to much lower levels however this has not happened in this first year of operation for reasons outlined in other parts of this paper.

It does not appear that the issue of penalty notices had an effect on fruit carriage in this first year of operation. This may be due to several factors. Most SEINS were issued in the last three months of operations. Processing SEINS appeals may delay finalisation by up to 4 months. For instance, by the end of February, 204 SEINS had been issued however only 62 (30%) had been finalised. There is some suggestion of a downward trend in fruit carriage on the Sturt Highway and at Kamarah, the sites with the highest proportion of local traffic. Future surveys may give a clear picture of the impact of infringement notices and will require additional data collection in the 1998/99 year.

The disposal/carriage ratio is reasonably uniform across most groups surveyed. Differences between groups were small, compared to differences between groups in their likelihood of carrying fruit.

The Sturt Highway has a higher proportion of local traffic driving into or returning to the FFEZ, compared with the Newell. The Sturt Highway carried east-west traffic and proceeds towards the fruit growing areas in the New South Wales FFEZ. The Newell Highway has north-south traffic that mostly travels through the edge of the FFEZ but largely does not go towards fruit growing areas until travellers reach Victoria. The Kamarah site also has a higher proportion of local traffic, travelling towards the New South Wales FFEZ fruit production areas on a road parallel to the Sturt Highway. The traffic volume on at Kamarah is slightly less than on the Sturt Highway, both of which are less than the Newell Highway (Table 1). It is likely that a higher level of protection to the New South Wales fruit growing areas would be afforded by operating a higher proportion of roadblocks on the Sturt Highway and the Kamarah site with the Newell Highway being a lower priority. The higher level of



protection to the Victorian horticultural industries would be from the Newell Highway with its high proportion to Victorian travellers.

There were significant differences in the likelihood of travellers carrying fruit based on their State of origin. New South Wales travellers carried significantly less fruit than other travellers. Campbell (2000) noted that travellers frequently going through a roadblock site generally quickly "learned" not to carry fruit into the site, however a minor proportion of recalcitrants carried fruit into the inspection station on every trip. It is likely that New South Wales travellers, especially locals, were inspected more frequently than travellers for other States and this could have contributed to their different behaviour.

Travellers from South Australia make up only 2.9% of the traffic flow. Their rate of fruit carriage was high (26%) in this survey and high (33%) in 1994/95 (NSW Agriculture) despite a high level of community education across South Australia (Primary Industries South Australia 1997). All travellers entering South Australia are stopped at inspection stations near the State border and all fruit is seized. Given this level of community education and vehicle inspections, it was expected that the level of compliance would be greater than that for Victorian travellers where there are no vehicle inspections for fruit at the border but this was not the case.

Cars towing caravans remain the highest risk vehicle type and retirees and families remain the highest risk group. This confirms the reports of Campbell (2000) and Dominiak *et al.* (2000a). Travellers going to and coming from New South Wales remain the lowest risk in regard to origin and destination. Local travellers entering the FFEZ still carry fruit at unacceptably high levels. Future programs should target these high-risk travellers.

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